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AMSAT NEWS SERVICE
ANS-212

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

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ANS-212 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2022 July 31

New AMSAT Digital Radio Links

There have been a couple very new updates to the AMSAT digital radio links.

First, while the AMSAT DMR talkgroup 98006 and the U.S. AMSAT Yaesu System Fusion (YSF) 11689 reflector have been linked together for years, making it quite simple to use either method to cross communicate with others, the AMSAT DSTAR reflectors have not been bridged into the system. So, it's been isolated.

Walter Holmes, K5WH, with the help of Craig Jump, 2M0JUM, have been working to solve that problem. Craig has been able to link his XLX606 DSTAR reflector to the AMSAT reflector, and now also bridged the DSTAR reflector

to the AMSAT DMR 98006 talkgroup.

What this means, is that you can now use either DMR, YSF-Fusion, or DSTAR, and communicate with anyone on either of these technologies, seamlessly.

As with ALL of this digital stuff, it's probably worth mentioning that it's necessary to give the system about 1 or 2 extra seconds when you key up, for all the linking to fully engage before you talk, just to ensure you don't cut off the first of what you want to say. But that's been the same even with the way we have had DMR and YSF linked for years now.

This system is still being tested, so it's possible it could be temporarily disabled at times, but hopefully this will be as solid as the previous bridge, and you will be able to take advantage of it.

As always, let K5WH know if you experience anything that needs attention.

The second new development is for those that have a Windows or Android environment, there is now yet another way to get to the AMSAT DSTAR reflector, with NO RADIO necessary. (Of course you have to register for an ID, to prove that you're a licensed ham, before you can use the system.)

You might be familiar with an application called BlueDV, that many of us have used for years, and requires you to have an ambe server to connect to, and use your PC or cell phone to access DMR, YSF-Fusion, or DSTAR. David Grootendorst, PA7LIM, created this years ago, and has been plenty helpful. Visit https://www.pa7lim.nl/bluedv/ for the Windows software, or the Google Play Store for Android.

David also created an application called Peanut, that does the same for a small but directed set of systems on DMR, YSF, and DSTAR, where you don't need a radio or an AMBEserver to access these networks. Unfortunately, there is not an iOS solution for this at this time, but it works very well for the Windows and Android environments.

Now, since 2M0JUM has created a link from his XLX606 DSTAR reflector to the AMSAT DSTAR reflector, you can use the PEANUT app, and connect to XLX606, and you will be liked into the AMSAT network. Early testing looks like DMR and YSF are going to DSTAR fine, but DSTAR back is showing the callsign data, but the audio is not coming through. From the Peanut app, it's working BOTH ways just fine.

I hope this adds some new functionality that others can use to help us all stay better in touch while chasing these great satellites across the skies.

[ANS thanks Walter Holmes, K5WH, for the above information]

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In accordance with our Bylaws, we must hold an election, even though we have three nominations for three open Director positions. As such, we will host electronic voting on our Member Portal this year, at no cost to the organization. Voting is now open and will close on September 15, 2022.

When you click on the poll link, you will see your ballot (poll question). After choosing from the possible options, click the Submit button to cast your vote. Unlike many online polls, the results of all votes cast, up to the point of your vote, will not be displayed. AMSAT members can only vote once. If you click the poll link again after already voting, a vote submitted message will be displayed. As three seats on the Board of Directors are up for election this year, all three candidates will be seated on the Board when the voting period concludes on September 15, 2022.

If you need assistance logging into your membership account to vote, please follow this link: https://bit.ly/3ATZFrV

[ANS thanks Paul Stoetzer, N8HM, AMSAT Executive Vice President and Acting Secretary, for the above information]

Call for Papers - 2022 AMSAT Space Symposium & Annual General Meeting

This is a repeat of the first call for papers for the 40th annual AMSAT Space Symposium to be held on the weekend of October 21-22, 2022 at the Crowne Plaza Suites hotel in Bloomington, Minnesota.

Proposals for symposium papers and presentations are invited on any topic of interest to the amateur satellite community. We request a tentative title of your presentation as soon as possible, with final copy submitted by October 14 for inclusion in the symposium proceedings. Abstracts and papers should be sent to Dan Schultz, N8FGV at n8fgv at amsat.org

[ANS thanks Dan Schultz, N8FGV, AMSAT Symposium Proceedings Editor, for the above information]

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The prize consists of an economic amount donated by the friends of the Association and that will be used to cover part of the costs of developing and launching the satellite, expected for January 2023.

The Association promotes under the name of Salvatore 009 a group of friends who with love and similar affinities help with their work, with their ideas and with their money to pay for art and sports in general; especially those that this family member and friend Salvador practiced for years.

Salvador has always participated with a great spirit of improvement and non-profit in many disciplines that essentially represent the values of sport in any part of the world. Another virtue that characterized him was his love for art and his ability to identify interesting projects in life, as well as his innate talent to create and his imagination to develop them with optimism, confidence and joy. Sport and art share those values that characterized him: they favor personal development and self-esteem. They also help to become more independent in life, create self-discipline, foster fighting spirit and teamwork.

AMSAT-EA and URE thank the Salvatore 009 Association for this award, of which we feel very proud.

The URESAT-1 satellite itself is based on the previous experience of the GENESIS, EASAT-2 and HADES missions, in which numerous students from Spanish universities participated, and will incorporate many improvements that have been identified thanks to the results of these projects. The design is estimated to be 90% new. Among the novelties, a new 32-bit on-board computer stands out, which allows the available functionalities to be increased, including the SDR processing carried out and which results in higher speeds of transmission and re-transmission of data, as well as an increase in the surface of solar panels, which translates into more energy and higher transmission power. The antenna deployment mechanism has also been improved, increasing its reliability.

URESAT-1 will incorporate a repeater for FM voice and FSK data, as well as CW beacons, pre-recorded voice, FSK telemetry and an SSTV camera that will transmit live images and pre-loaded photos in analog SSTV format.

The launch of URESAT-1 is scheduled for January 2023 aboard a SpaceX Falcon-9, from Cape Canaveral in the United States.

[ANS thanks AMSAT-EA for the above information, and apologizes for any errors in translation]

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areas. If you aren't hearing activity on the downlink, it is unwise to make a "blind" call on the uplink frequency. Getting into the satellite is often easier than hearing it. Make certain you copy the downlink before transmitting.

2. NO CQs. FM satellites have a single channel and many stations are attempting to use the channel in a limited time. There is no time for calling CQ, or for repeatedly announcing your own call. Instead, listen for stations already active on the pass, and when you have an opportunity, make a call to a specific station you wish to work.

3. BE COURTEOUS. If Station A calls Station B, give Station B at least a millisecond or two to answer, and let them complete their brief QSO. Avoid interrupting or jumping on top of a contact in progress. Give priority to rovers or other special stations that many are anxious to contact.

4. BE WELCOMING. Make an effort to make calls to unfamiliar callsigns you've not yet worked before. Let newcomers have a chance, rather than shutting them out to say hello to stations you greet everyday.

5. DON'T BE A LID! Do "testing," whistling, or "hello" someplace else. Modes other than FM voice have no place on these satellites. If you wish to experiment with FT modes, please feel free to do so on AO-109, but definitely NOT on an FM satellite.

(ANS thanks Drew Glasbrenner, KO4MA, AO-91 Control Operator, and Mark Johns, K0JM, for the above information)

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in space, landing him fifth on the list of record holders for cumulative time in space for all NASA astronauts. He was the fourth person to fly on three different spacecraft – the space shuttle, Soyuz, and SpaceX Crew Dragon – and he performed nine spacewalks during his three spaceflights.

Kimbrough was recently the commander of NASA's SpaceX Crew-2 mission to the International Space Station, the second long-duration mission for the Crew Dragon spacecraft, and the longest spaceflight for a U.S. human spacecraft. Throughout the mission, Kimbrough and the Expedition 65 crew performed more than 250 scientific investigations designed to benefit all of humanity and help future exploration.

Shane's expertise and leadership has been a huge asset to me personally and the astronaut office for many years. He has been a mentor to many astronauts, and it has been an absolute pleasure and honor to serve with him," said Chief Astronaut Reid Wiseman at NASA's Johnson Space Center in Houston.

"I am grateful for the opportunity to serve as a NASA astronaut for the past 18 years," Kimbrough said. "I am honored to have been able to fly on three different spacecraft and to spend time at the International Space Station. I've worked with the best of the best in orbit and on the ground and am grateful for those that have supported me and my family. I've wanted to be an astronaut since I was a little kid watching NASA astronauts go to the Moon. To accomplish three spaceflights and nearly 400 days in space in my career is truly a dream come true."

Kimbrough was born in Killeen, Texas, and graduated from The Lovett School in Atlanta in 1985. He received a Bachelor of Science degree in aerospace engineering from the U.S. Military Academy in West Point, New York, in 1989, and a Master of Science degree in operations research from the Georgia Institute of Technology in Atlanta in 1998. Kimbrough was selected as an astronaut candidate by NASA in May 2004.

[ANS thanks NASA for the above information]

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

Upcoming contacts:

Swiss Guide and Scout Movement, Bern, Switzerland, direct via HB9JAM. The ISS callsign is presently scheduled to be OR4ISS. The scheduled crewmember is Samantha Cristoforetti, IZØUDF. Contact is go for: Wed 2022-08-03 12:23:28 UTC 43 deg. Watch for Livestream at: https://www.youtube.com/channel/UCq64C8qJD-okYt-b_nwKUjA Also available on their web radio at https://www.mova.ch/it/radio

Ufa State Aviation Technical University, Ufa, Russia, direct via TBD. The ISS callsign is presently scheduled to be RSØISS. The scheduled crewmember is Oleg Artemiev. Contact is go for Sat 2022-07-30 14:05 UTC.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

Kjell Lindgren, KO5MOS, continues to be making general contacts on the cross-band repeater. He is using NA1SS. If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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Cheyenne, Wyoming 82007
https://wyhamcon.org/site

[ANS thanks Paul Overn, KE0PBR, AMSAT Events page manager, for the above information]

Satellite Shorts From All Over

+ Mainstream news media have widely reported the recent statement by Yury Borisov, the new head of Roscosmos Space Corporation, that Russia plans to withdraw from the International Space Station after 2024. However, ESA Director General Josef Aschbacher tweeted, "Not surprised to hear Borisov stating Russia would pull out of ISS *after* 2024 (nothing new) and that Russia will continue to meet current obligations (good news). I count on good common sense. The ISS is the only realistic (well-equipped) space laboratory – for years to come." (ANS thanks SpaceNews for the above information)

+ Congress has passed the first NASA authorization bill in more than five years, formally extending operations of the International Space Station and backing NASA's Artemis exploration effort. The House passed on a 243–187 vote July 28 the "Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act," a day after the Senate passed the bill on a 64–33 vote. President Biden has stated he supports the bill and will sign it into law. The bill was primarily a vehicle for supporting domestic manufacturing of semiconductors, but one portion of the bill included NASA authorization legislation. That portion, released last week, extends NASA's authorization to operate the ISS from 2024 to 2030. It also formally authorizes a "Moon to Mars Program" that includes the Artemis campaign. (ANS thanks SpaceNews for the above information)

+ SpaceX and NASA have delayed the launch of the next U.S. crew flight to the International Space Station from early September to no earlier than Sept. 29, allowing time for ground teams to replace an interstage on the mission's new Falcon 9 booster after it was damaged during transport. The Falcon 9 booster stage, riding horizontally on a truck and trailer, struck a bridge during the trip from SpaceX's factory in Hawthorne, California, to the company's test facility in McGregor, Texas. (ANS thanks Spaceflight Now for the above information)

+ ESA astronaut Samantha Cristoforetti, IZØUDF, checked off a number of "firsts" when she completed her first ever spacewalk on Thursday, July 21, conducted alongside cosmonaut Oleg Artemyev. Not only was it a first for her, but this spacewalk was also the first conducted by a European woman, and the first conducted by a European in a Russian Orlan spacesuit from the International Space Station. The pair of spacewalkers worked on a number of tasks over the course of their seven-hour EVA, including deploying ten amateur radio nanosatellites by hand, and installing the European Robotic Arm (ERA) on the newest Space Station's laboratory module, Nauka. (ANS thanks the European Space Agency for the above information)

+ Just two weeks after the first release of imagery, the James Webb Space Telescope (JWST) is reshaping astronomy, according to an article at https://bit.ly/3Sd5XZF. Meanwhile, the larger micrometeoroid that hit the JWST in May caused damage to one of the mirror sections and a very slight decrease in image quality. Alone, this isn't an issue, but it was more damage than was expected by micrometeoroid models, and so is worrying if it means that either the telescope is more susceptible to damage than anticipated, or the debris environment is unexpectedly harsh. (ANS thanks The Orbital Index for the above information)

+ China launched their Wentian research lab module on Sunday, July 24, the

second of three modules that will form the completed Tiangong space station. The first stage of the Long March 5B rocket which launched Wentian could reenter the atmosphere around July 31. Experts at the Center for Orbital and Reentry Debris Studies (CORDS) have been closely tracking the 53.6-meter-tall stage, which is thought to have a mass of around 23 metric tons. The most likely scenario is that the stage reenters over the oceans. There is however a “non-zero probability of the surviving debris landing in a populated area – over 88 percent of the world’s population lives under the reentry’s potential debris footprint,” CORDS reported. “A reentry of this size will not burn up in the Earth’s atmosphere, and the general rule of thumb is that 20–40 percent of the mass of a large object will reach the ground, though it depends on the design of the object.” (ANS thanks Space News for the above information)

+ Think inflation is hard on *your* wallet? NASA just bought a Falcon Heavy launch for the Nancy Grace Roman Telescope in 2026 for $255 million. By comparison, the Europa Clipper Falcon Heavy launch only cost NASA $178 million almost exactly one year ago! (ANS thanks The Orbital Index for the above information)

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In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mark Johns, K0JM
k0jm at amsat dot org